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(21)Application number : 08-288581 (71)Applicant : XING:KK
BROTHER IND LTD

(22)Date of filing : 30.10.1996 (72)Inventor : YO SHIZUKA

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(54) INFORMATION DISTRIBUTION SYSTEM

(57)Abstract:
PROBLEM TO BE SOLVED: To allow an information providing device being a receiving side to surely receive and store information when information for providing a new service is distributed from a host device.
SOLUTION: Before a KARAOKE (recorded accompaniment) center 1 distributes KARAOKE data to a KARAOKE terminal 2, CPU 10 transmits the size of KARAOKE data to distribute to the terminal 2 through a ground communication line 40. At the terminal 2, CPU 20, based on the size of KARAOKE data scheduled to distribute,

judges whether a hard disk can afford to store KARAOKE data scheduled to distribute and if it can not, reduce stored data to secure at least the space capacity of the data size.

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CLAIMS

[Claim(s)]
[Claim 1] The information for service provisions distributed through the 1st communication path from the host equipment which is accumulating information, and this host equipment is memorized for the information storage means. It has information offer equipment which may be having communications service be made to be performed by the user based on the information for service provisions memorized. This information offer equipment Transmission capacity minds few 2nd communication path relatively to said 1st communication path. It is the information

distribution system constituted possible [the upload to said host equipment] in operation track record information at least, and two-way communication is possible for said 2nd communication path. Said host equipment While being constituted so that it may transmit to said information offer equipment through said 2nd communication path, the data size of said information for service provisions on a distribution schedule said information offer equipment An availability decision means to judge whether the availabilities of said information storage means are insufficient based on the data size of the information for service provisions on said distribution schedule transmitted from said host equipment, When it is judged that the availabilities of said information storage means run short with this availability decision means The information distribution system characterized by having an information deletion means to delete the predetermined information for service provisions memorized by said information storage means until the availability in which new storage of the information for service provisions on said distribution schedule is possible at least is securable.

[Claim 2] The information distribution system according to claim 1 characterized by using the satellite communication circuit which goes via a satellite relay center as said 1st communication path, and on the other hand using the ground communication line as said 2nd communication path.

[Claim 3] It is the information distribution system according to claim 1 or 2 which said information offer equipment is further equipped with a decision means whenever [need / of judging whenever / need / for every information for service provisions / which was memorized by said information storage means], and is characterized by constituting said information deletion means so that it may delete in an order from the information for service provisions that whenever [need] was judged to be low by the decision means whenever [said need].

[Claim 4] A decision means is an information distribution system according to claim 3 characterized by judging whenever [need] for said every information for service provisions based on the period which is not used for activation of predetermined communications service whenever [said need].

[Claim 5] A decision means is an information distribution system according to claim 3 or 4 characterized by judging whenever [need] for said every information for service provisions based on the activation frequency of predetermined communications service whenever [said need].

[Claim 6] Claims 1-5 which karaoke data are contained in the information for service provisions distributed from said host equipment, and are characterized by constituting said information offer equipment as an online karaoke system which can perform the karaoke performance based on said karaoke data are the information distribution systems of a publication either.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the information distribution system which information offer equipment performs communications service to a user like for example, an online karaoke system based on the information for service provisions distributed from host equipment, and consists of information offer equipment possible [upload] in operation track record information to host equipment.

[0002]

[Description of the Prior Art] Conventionally, it set to the information distribution system which distributed the information for service provisions required for the service provision performed in information offer equipment from host equipment, and was connected by the communication line in which the data transmission of both directions [equipment / host equipment and / information offer], such as the telephone line, is possible, and data were transmitted from both sides through this communication line. From host equipment, information for service provisions mentioned above was distributed (download), and predetermined information, such as operation information, was uploaded from information offer equipment to host equipment.

[0003] For example, if it is the online karaoke system which is one of such the information distribution systems, in order [which the released new song can use promptly in the karaoke terminal as information offer equipment] to make it like (it can sing), distributing the karaoke data of a new song from host equipment every several days is realized. Moreover, many what kind of music are sung in the karaoke terminal or for what kind of time zone it being used, and operation track record information are information important also from the point of enriching a karaoke system more, for example, he is trying to upload them to host equipment every day in many cases.

[0004]

[Problem(s) to be Solved by the Invention] However, since the situation in each karaoke terminal used as a distribution place is not taken into consideration by the conventional approach when distributing the information on karaoke data etc. from host equipment, For example, in spite of having received karaoke data and having started data storage for storage means, such as a hard disk The capacity of a storage

means may fill that reception and storage are not completed yet, and un-arranging [that all are unacquirable] may produce the distributed karaoke data. It is disadvantageous especially to resend repeatedly from a cost side etc., in performing data transmission using a satellite communication circuit etc., and to change into the condition that reception and storage are certainly performed in a receiving side, since it distributes is desired.

[0005] Of course, although preparing a mass information storage means in consideration of such a situation is also considered, it is necessary to prepare a for that purpose very large-scale information storage means, and leads to enlargement and a cost rise of equipment. And, of course, such a problem is not necessarily restricted only to an online karaoke system, and is common in various kinds of systems to offer information in future multimedia society.

[0006] Then, it is made in order that this invention may solve the trouble mentioned above, and as reception and storage are certainly performed in the information offer equipment which is a receiving side when the new information for service provisions is distributed from host equipment, without making an information storage means to build enlarge beyond the need, it aims at aiming at employment of a suitable information distribution system.

[0007]

[The means for solving a technical problem and an effect of the invention] Invention according to claim 1 made in order to attain this purpose The information for service provisions distributed through the 1st communication path from the host equipment which is accumulating information, and this host equipment is memorized for the information storage means. It has information offer equipment which may be having communications service be made to be performed by the user based on the information for service provisions memorized. This information offer equipment Transmission capacity minds few 2nd communication path relatively to said 1st communication path. It is the information distribution system constituted possible [the upload to said host equipment] in operation track record information at least, and two-way communication is possible for said 2nd communication path. Said host equipment While being constituted so that it may transmit to said information offer equipment through said 2nd communication path, the data size of said information for service provisions on a distribution schedule said information offer equipment An availability decision means to judge whether the availabilities of said information storage means are insufficient based on the data size of the information for service provisions on said distribution schedule transmitted from said host equipment, When it is judged that the availabilities of said information storage means run short with this availability decision means It is characterized by having an information deletion means to delete the predetermined information for service provisions memorized by said information storage means until the availability in which new storage of the

information for service provisions on said distribution schedule is possible at least is securable.

[0008] According to the information distribution system of this invention, host equipment transmits the data size of the information for service provisions on a distribution schedule to information offer equipment through the 2nd communication path. And information offer equipment judges [the] whether the availabilities of an information storage means are insufficient based on the data size of the information for service provisions on the transmitted distribution schedule. When it is judged that the availabilities of an information storage means are insufficient, the predetermined information for service provisions memorized by the information storage means is deleted until the availability in which new storage of the information for service provisions on a distribution schedule is possible at least is securable.

[0009] The capacity of an information storage means fills that reception and storage of the information for service provisions are not completed to an information offer equipment side by it when the information for service provisions is distributed from host equipment by this, and it is lost that un-arranging [that all are unacquirable] produces the distributed information for service provisions. That is, when the new information for service provisions is distributed from host equipment, in the information offer equipment which is a receiving side, reception and storage are performed certainly. Moreover, the information storage means by which it is large-scale beyond the need is not prepared supposing such a situation. Thus, employment of a suitable information distribution system can be aimed at.

[0010] In addition, although few things are relatively adopted for transmission capacity to the 1st communication path which is used in order that the 2nd communication path may upload operation track record information etc., and is used in order to distribute the information for service provisions As the example, as shown in claim 2, on the other hand, it is possible [it] to use a ground communication line as the 2nd communication path using the satellite communication circuit which goes via a satellite relay center as the 1st communication path. When distributing information for service provisions using a satellite communication circuit, resending repeatedly from a cost side etc. is disadvantageous, and since it distributes, to change into the condition that reception and storage are certainly performed in a receiving side is desired. It is desirable to delete the predetermined information for service provisions memorized by the information storage means until the availability in which new storage of the information for service provisions on a distribution schedule is possible is securable also from this point. In addition, as a configuration with overall [of a system] using the 2nd communication path there being less transmission capacity than the 1st communication path, and advantageous also in respect of cost, since constituting possible [two-way communication] also for the 1st communication path, and also transmitting operation track record information through the 1st communication path is

considered, the amount of data of operation track record information is also relatively small unlike the information for service provisions and there is also little urgency, it is desirable.

[0011] Moreover, as shown in claim 3, information offer equipment may be further equipped with a decision means whenever [need / of judging whenever / need / for every information for service provisions / which was memorized by the information storage means], and an information deletion means may be constituted so that it may delete in an order from the information for service provisions that whenever [need] was judged to be low by the decision means whenever [said need]. That is, since it is not uniform in many cases, if it deletes, it is desirable [the significance of the information for service provisions memorized by the information storage means] to carry out to order with whenever [need / low].

[0012] The following modes can be considered about a decision means to judge whenever [said need]. Namely, in what is shown in claim 4, a decision means judges whenever [need] for every information for service provisions based on the period which is not used for activation of predetermined communications service whenever [need]. Furthermore, in what is shown in claim 5, a decision means judges whenever [need] for every information for service provisions based on the activation frequency of predetermined communications service whenever [need].

[0013] Since it is presumed that whenever [at present need] is low as for what has the long period which is not used, if it deletes, it will be thought desirable to delete from such information for service provisions previously. Moreover, activation frequency is considered that it is relatively desirable to delete it from such information for service provisions previously if whenever [need] deletes, since a low thing is also relatively presumed to be low.

[0014] However, even if the period which is not used apparently is long, when it sees in the long run, it is used constantly, and the use count may be total and may increase. Moreover, a thing [analyzing synthetically the period which does not judge that whenever / need / is simply low only by carrying out / since it of a use count is / the use count / conversely natural at least when the storage stage of the information for the service provisions is new at least / predetermined period use / or saying / that there are few use counts /, for example, is not used, operating frequency, etc., and judging whenever / need] is [.] desirable. Moreover, about the information for service provisions made to memorize newly also about activation frequency, it is hard to judge only by activation frequency correctly. That is, it is desirable to set up a certain amount of decision period, and to judge by activation frequency in the meantime. It is better to be made to judge after predetermined period progress whenever [this / need] from the time of the storage about the information for service provisions which followed, for example, was made to memorize newly.

[0015] In addition, as an information distribution system of this invention, as shown in

claim 6, karaoke data are contained in the information for service provisions distributed from host equipment, and it is possible to constitute information offer equipment as an online karaoke system which can perform the karaoke performance based on karaoke data. As mentioned above, in the case of an online karaoke system In order [which the released new song can use promptly] to make it like (it can sing), The karaoke data of a new song are distributed from host equipment every several days. For example, again Many what kind of music are sung in the karaoke terminal or for what kind of time zone it is used, and operation track record information He is information important also from the point of enriching a karaoke system more, for example, is trying to upload also actually to host equipment every day in many cases. Therefore, it is very effective to apply this invention to such an online karaoke system.

[0016] Of course, the information for service provisions is not restricted to karaoke data, in addition game information etc. is considered variously. If especially the information class by which it is made desirable in the multimedia society of current or the future to distribute the new information for service provisions one after another is information for service provisions which is increasing steadily and which has character like current karaoke data, it will be thought that it is very effective.

[0017]

[Embodiment of the Invention] Hereafter, the operation gestalt which materialized this invention is explained with reference to a drawing. Drawing 1 is the block diagram showing the outline configuration at the time of applying the information distribution system of 1 operation gestalt to the so-called online karaoke system.

[0018] The karaoke center 1 as "host equipment" and the karaoke terminal 2 as "information offer equipment" are connected by the satellite communication circuit 30 as "the 1st communication path", and the ground communication line 40 as "the 2nd communication path", and the online karaoke system of this operation gestalt is constituted. In addition, in the system shown in drawing 1 , it is the minimum example of a configuration which consisted of one set of one set of the karaoke terminal 2, and the karaoke center 1. In fact, as for each above-mentioned equipment, it is common respectively that more than one may recognize base existence and two or more sets of the karaoke terminals 2 exist per set of the karaoke center 1.

[0019] Said satellite communication circuit 30 is a path for making the data transmitted from the karaoke center 1 relay through the satellite relay center 31 which turns into a space station, and distributing to the karaoke terminal 2. In addition, although only one satellite relay center 31 is shown in drawing 1 , the configuration in which the satellite relay center 31 which turns into a space station makes between those with two or more, and its satellite-two or more relay centers 31 the trunk line between satellites may be used.

[0020] Moreover, said ground communication line 40 is for making two-way communication possible between the karaoke center 1 and the karaoke terminal 2

through a telephone network 41. In addition, you may be not only the telephone line but a dedicated line for data transmission etc. However, in the case of a telephone network 41, there is an advantage that the existing facility can be used.

[0021] CPU10 as a control means in which said karaoke center 1 manages control of the whole center, While transmitting the data size of the karaoke data distributed by the satellite communication section 11 and the satellite communication circuit 30 for distributing the karaoke data as "information for service provisions" by the satellite communication circuit 30 to the karaoke terminal 2 With the land-based line communications department 12 for receiving the operation track record information transmitted through the ground communication line 40 from the karaoke terminal 2 It adds to the karaoke data itself distributed by the satellite communication circuit 30. The hard disk 13 as an "information storage means" to memorize the next distribution data size transmitted to the karaoke terminal 2 consists of the operation track record information and the ground communication lines 40 of each karaoke terminal 2 which received by the ground communication line 40 as main elements.

[0022] CPU20 as a control means which the karaoke terminal 2 manages control of the whole terminal, and is equivalent to an "availability decision means", a "information deletion means", and "being a decision means whenever [need]" on the other hand, While receiving the size of the next distribution data sent from the karaoke center 1 through the satellite communication section 21 and the ground communication line 40 for receiving the karaoke data distributed from the karaoke center 1 by the satellite communication circuit 30 The hard disk 23 as the land-based line communications department 22 for transmitting operation track record information to the karaoke center 1 through the ground communication line 40 and a storage means to memorize the karaoke data received through the satellite communication circuit 30 is constituted as main elements. In addition, although there are the performance section for performing a karaoke performance in fact and the performance sound output section, illustration and detailed explanation are omitted [in / for a chief aim / an exchange of the data between the karaoke center 1 and the karaoke terminal 2] here.

[0023] Explanation of karaoke data constitutes karaoke data from tune number number information which is the identification information for identifying music, and stereo information. The stereo information of these consists of performance information, and the words information and background image information on MIDI (Musical Instrument Digital Interface) specification which is the information on accompaniment music. Background image information encodes the image information which corresponded for every music. And if it remains as it is, it is preventing from using karaoke data in the case of this operation gestalt. In order to use it, it is necessary to perform predetermined accounting. For example, when scramble information is added to karaoke data in the state of un-charging, it cannot be used if it

remains as it is, and having carried out, discharge information is acquired by accounting, and it is possible [it] to carry out licence calling off scramble information using the discharge information. Moreover, as it was called addition of scramble information, use of the karaoke data itself is not made improper, but even if the karaoke data itself are usable, when it has not charged an accounting condition physically, it sets up the disable flag and may be made to carry out control which is not received even if the karaoke data is requested. And when it comes to finishing [accounting], the disable flag is realizable if modification, then control which was said are carried out to an usable flag.

[0024] Either the usable flag or the disable flag is set up for every music into accounting and an operating-experience table, and he permits use or is trying to be forbidden with this operation gestalt according to the flag. Its accounting and operating-experience table stored in the hard disk 23 of the karaoke terminal 2 are shown in drawing 5 . the table which consists of an item of the tariff to its tune number number and music name, and its karaoke music information, an accounting day, an accounting condition and a licence prohibition flag and receiving Japan or last request Japan, and a use count exists for every karaoke data.

[0025] After receiving karaoke data, when not carrying out to receiving Japan or last request Japan by being used for karaoke performance processing, without being requested once here, a receiving day is memorized, when it is and a request is used for karaoke performance processing, it is updated for every request of the and the day the request was finally will be memorized here. Moreover, a use count is a count used by the request as a karaoke performance.

[0026] Moreover, an accounting condition is either of "un-charging". [with which "finishing / accounting /" and accounting with which predetermined accounting can be managed cannot be managed] And as a licence prohibition flag, as mentioned above, the flag of authorization or prohibition is set up, but first, this is made into the lock condition which a prohibition flag is set up and cannot perform use of music, when an accounting condition "has not been charged." And if charging becomes "finishing" by predetermined accounting, an authorization flag is set up, a lock condition is canceled and karaoke data can be used freely.

[0027] In the karaoke system of this operation gestalt which has the above-mentioned configuration, the karaoke center 1 can distribute karaoke data to the karaoke terminal 2 through the satellite communication circuit 30. If the karaoke data of a new song are distributed every several days in order [which the released new song can use promptly in the karaoke terminal 2 if fastidious] to make it like (it can sing) for example, it is very useful for a user.

[0028] Moreover, many what kind of music are sung in the karaoke terminal 2 or for what kind of time zone it being used, and operation track record information are information important also from the point of enriching a karaoke system more. Then, in

this karaoke system, it uploads in the karaoke center 1 from the karaoke terminal 2 through the ground communication line 40 every day. " In this way Although operation track record information is transmitted in the ground communication line 40 and he is trying to transmit karaoke data by the satellite communication circuit 30 In the karaoke terminal 2 which is the side which receives karaoke data and is memorized to a hard disk 23 depending on the availability of the hard disk 23 In spite of having not completed data storage yet, un-arranging [that it fills and all the distributed karaoke data cannot be acquired] may arise. It is disadvantageous especially to resend repeatedly from a cost side etc., in distributing karaoke data like this operation gestalt using the satellite communication circuit 30, and since it distributes, it is desirable to change into the condition that reception and storage are certainly performed in the karaoke terminal 2 which is a receiving side.

[0029] Then, before the karaoke center 1 distributes karaoke data to the karaoke terminal 2, after transmitting the size of the karaoke data to distribute to the karaoke terminal 2 through the ground communication line 40 and completing predetermined processing at the karaoke terminal 2, he is trying to distribute karaoke data by the satellite communication circuit 30 in this online karaoke system. Based on the size of the karaoke data of a schedule with which CPU20 is distributed from the karaoke center 1, it judges whether it is possible for a hard disk 23 to be able to memorize that data size, and if there is nothing, processing which secures the availability of that data size at worst will be carried out to this predetermined processing.

[0030] The detail of this processing is explained with reference to drawing 2 and 3. The flow chart which shows the processing to which drawing 2 is carried out in the karaoke center 1, and drawing 3 are flow charts which show the processing performed at the karaoke terminal 2. In the karaoke center 1, after performing initial setting with powering on, as shown in drawing 2 , in the first step S10, it confirms first whether be the communication link time of day T1 in the ground communication line 40. When it is the communication link time of day T1 in the ground communication line 40, it shifts to (S10:YES) and the ground communications processing of S20-S100. In addition, it shifts to S110, without performing (S10:NO) and processing of S20-S100, when it is not the communication link time of day T1 in the ground communication line 40.

[0031] In S20, a terminal number N is set as initial value 0, and the terminal number N is incremented in S30 (N=N +1). And in S40, connection processing is performed to the karaoke terminal 2 of the terminal number N. When connection processing is successful, it confirms whether be in the waiting state waiting for transmitting of the size ("distribution size" is only called hereafter.) of the karaoke data distributed by the satellite communication circuit 30 next time in (S50:YES) and S60. In being the transmitting waiting of distribution size, after shifting to (S60:YES) and S70 and transmitting a demand (log demand) of the distribution size and operation track record information to the karaoke terminal 2 concerned, it shifts to S90. On the other hand, in

not being the transmitting waiting of distribution size, after shifting to (S60:NO) and S80 and performing only transmission of a log demand, it shifts to S90.

[0032] In S90, the log transmitted from the karaoke terminal 2 according to the log demand made in S70 or S80 is received, and it memorizes to a hard disk 23. Then, maximum Nmax to which the terminal number N is set in S100 It judges whether it became or not. If it has not become (S100:NO), return to S30 and a terminal number N is incremented again. Maximum Nmax to which it connects with similarly, transmission (S70) of distribution size and a log demand or transmission (S80) of a log demand is performed, and the terminal number N is finally set When it becomes, it shifts to (S100:YES) and S110.

[0033] In this way, although the karaoke terminal 2 is accessed one by one, also when negative judgment, i.e., connection processing, is not successful by S50, it thinks. In this case, (S50:NO) it shifts to processing of S100, without performing processing of S60-S90. Therefore, even when access to affirmative judgment 2, i.e., all karaoke terminals, is made by S100, the connection itself may not be successful and, as a result, the distribution size of S70, transmission of a log demand, or the karaoke terminal 2 of S80 with which neither of transmission of a log demand is made may also be produced.

[0034] In S110, it judges whether only predetermined time t became the last time of day (T2-t) from the communication link time of day T2 in the satellite communication circuit 30. And when time of day (T2-t) comes, it shifts to (S110:YES) and S120, and it judges whether the transmitting processing of distribution size to the karaoke data distributed first this time has ended to all the karaoke terminals 2.

[0035] It thinks, also when negative judgment, i.e., connection processing, is not successful by S50, as mentioned above, and in this case (S50:NO), since processing of S60-S90 is not performed, distribution size is not transmitted, either. Therefore, when transmitting processing of distribution size is not settled, it shifts to (S120:NO) and S130, and processing which transmits distribution size to the non-transmitted karaoke terminal 2 is performed. Although this serves as the contents of processing similar to above-mentioned processing of S20-S100, if transmission of distribution size is performed by the above S70, since the purport transmitted to the predetermined table will specifically be recorded, it performs transmitting processing of sequential distribution size about the karaoke terminal 2 which is not transmitted yet in the table. In addition, although it is natural, the same processing as S90 which receives and records the log which the log demand was transmitted with distribution size also in this case, and was transmitted from the karaoke terminal 2 as that answerback will also be performed.

[0036] After this processing of S130 is completed, it shifts to S140. In addition, when affirmative judgment, i.e., distribution size, is already transmitted to all the karaoke terminals 2 in S120, it shifts to S140 as it is. Although it judges whether only

predetermined time t became the last time of day (T2-t) from the communication link time of day T2 by above-mentioned processing of S110 although I understand also from the explanation so far, the time amount to which this predetermined time t can perform processing (S130) which transmits distribution size to the karaoke (S120:NO) terminal 2 with which transmitting processing of distribution size is not settled is set up. That is, since having transmitted distribution size to no karaoke terminals 2 is also considered, predetermined time t will be set up in consideration of the time amount which can perform transmitting processing of distribution size altogether to these.

[0037] In S140, it judges whether the communication link time of day T2 in the satellite communication circuit 30 came. In this case, when [in the satellite communication circuit 30] waiting (S140:NO) and time of day T2 come until it becomes communication link time-of-day T2, it shifts to (S140:YES) and S150, and the karaoke data distributed this time are distributed through the satellite communication circuit 30.

[0038] After the message distribution processing of the karaoke data of S150 is completed, it returns to S10. Next, the processing performed at the karaoke terminal 2 is explained with reference to the flow chart of drawing 3 . In the karaoke terminal 2, after performing initial setting with powering on, as shown in drawing 3 , in the first step S210, it judges first whether there is any call from the karaoke center 1. When there is a call from the karaoke center 1, (S210:YES) and predetermined connection processing are performed and the information from the karaoke center 1 is received as a condition which can communicate (S220). This is the distribution size of S70 of drawing 2 , transmission of a log demand, or the thing corresponding to any [of transmission of a log demand] processing of S80. Therefore, since there is a log demand in any case, in S230, processing which transmits terminal information, such as an operation log, to the karaoke center 1 is performed.

[0039] In S240 continuing, it judges whether next distribution size was received in the reception from the karaoke center 1 of S220. And when next distribution size is received, it shifts to (S240:YES) and S250, and the availability of a hard disk 23 is checked. Specifically, it judges whether the hard disk 23 is vacant by next distribution size. And when the availabilities of a hard disk 23 are insufficient, after performing deletion of the karaoke data memorized by the hard disk 23 in (S260:YES) and S270, it shifts to S280. About the deletion of this karaoke data, it mentions later.

[0040] On the other hand, further, when the availabilities of negative judgment 23, i.e., a hard disk, do not run short in S260, or when it is not reception of negative judgment, i.e., distribution size, in S240, in not being the call from negative judgment 1, i.e., a karaoke center, in S210, it shifts to S280, respectively.

[0041] It checks for the communication link time of day T2 in the satellite communication circuit 30 in the S280. In not being the communication link time of day T2 in the satellite communication circuit 30, it returns to (S280:NO) and S210, but

when the communication link time of day T2 comes, karaoke data are received in (S280:YES) and S290. If the communication link time of day T2 comes, in the karaoke center 1, the karaoke data which should be distributed through the satellite communication section 11 this time will be read from a hard disk 13, and will be distributed to the karaoke terminal 2 by the satellite communication circuit 30. In this case, since the satellite relay center 31 acts as intermediary and it distributes to each karaoke terminal 2 by the broadcast formula, at the karaoke terminal 2, by the satellite communication section 21, it will receive and the karaoke data distributed by that broadcast formula will be memorized to a hard disk 23.

[0042] After reception / storage processing of the karaoke data of S290 is completed, it returns to S210. Thus, in this online karaoke system, before the karaoke center 1 distributes karaoke data to the karaoke terminal 2, CPU10 transmits the size of the karaoke data to distribute to the karaoke terminal 2 through the ground communication line 40. At the karaoke terminal 2, it judges whether it is possible for a hard disk 23 to be able to memorize the karaoke data of a schedule with which CPU20 is distributed based on the size of the karaoke data of a distribution schedule, and if there is nothing, deletion will be carried out so that the availability of the data size may be secured at worst. Since he is trying to distribute karaoke data by the satellite communication circuit 30 after the deletion is completed, when karaoke data are distributed, in the karaoke terminal 2, reception and storage are performed certainly. Moreover, the hard disk 23 large-sized beyond the need is not prepared supposing such a situation. Thus, employment of a suitable karaoke system can be aimed at.

[0043] Here, the karaoke data deletion processing performed in S270 of drawing 3 is explained further. Although the greatest purpose is being able to memorize this karaoke data that should be distributed first and securing the availability of **** to a hard disk 23, therefore the karaoke data memorized by the hard disk 23 at present are deleted, since it is not uniform in many cases, if it deletes, it is desirable [the significance of the karaoke data memorized by the hard disk 23] to carry out to order with whenever [need / low].

[0044] Then, the low karaoke data of whenever [need] are looked for automatically, and the example of karaoke data deletion processing (S270) deleted as required is explained with reference to the flow chart of drawing 4 . A target availability is set up in the first step S310. Since this has received next distribution size in the processing shown in the flow chart of drawing 3 , it sets up how much availability there should just be based on the distribution size, and makes it a target availability ("the amount of targets" is only called hereafter.).

[0045] And the availability of a hard disk 23 judges whether it is under the amount of targets at continuing step S320. Without performing processing after S330, since it is convenient in any way even if it receives the karaoke data of a new song in this condition when the availability of negative judgment 23, i.e., a hard disk, is secured

more than the amount of targets by S320, this karaoke data deletion processing is ended and it shifts to S280 of the flow chart of drawing 3 .

[0046] On the other hand, when the availability of a hard disk 23 is under the amount of targets, it shifts to (S320:YES) and S330. In S330, the music which has not been charged is looked for with reference to the term of the accounting condition of accounting and an operating-experience table (refer to drawing 5). This is seen in order of the record number of a table, and if it goes by the case of drawing 5 , the thing of a tune number number "0002" corresponds first.

[0047] Therefore, it is judged as those with non-charged music by S340 in this case (S340:YES), and shifts to S350. In S350, in order to judge whether the condition of not charging continues for a long period of time, it judges whether it has passed more than alpha day since the receiving day. In not charging, since the disable flag is set up, it is not requested, and the term of receiving Japan or last request Japan surely serves as a receiving day. Therefore, it judges whether the receiving day was seen and it has passed more than alpha day.

[0048] For example, supposing what the condition of not charging follows about six months or more presupposes that you may delete as alpha= 180, for example, it performs this processing on April 1, Heisei 7, since the receiving day of the thing of the above-mentioned tune number number "0002" is on January 7, Heisei 4, it will serve as affirmative judgment by S350, and will shift to S360.

[0049] In S360, the karaoke data memorized by the hard disk 23 is deleted. And in S370 continuing, the record which corresponds out of accounting and an operating-experience table is deleted, and it returns to S320. In this way, the karaoke data of a tune number number "0002" are first deleted from a hard disk 23, for example, the record which corresponds out of accounting and an operating-experience table is deleted, and the availability of a hard disk 23 judges again whether it is under the amount of targets by S320.

[0050] And when the availability of a hard disk 23 is still under the amount of targets, processing not more than S330 is repeated. If it goes by the example of drawing 5 , the karaoke data of a tune number number "0005" will be deleted continuously, and, subsequently the karaoke data of a tune number number "0014" and "0015" will serve as a deletion candidate. Even if these two music is deleted, in still becoming affirmative judgment by S320, the karaoke data of a tune number number "0021" serve as a deletion candidate, but since the receiving day has not passed 180 days or more on January 14, Heisei 7, this serves as negative judgment by S350. In addition, music information request processing shown in S5 of drawing 4 about these music from now on is performed, and having presupposed that it does not delete, when the predetermined period had not passed since a receiving day is based on decision that there is still possibility of enough of being set up as finishing [accounting].

[0051] Thus, since it becomes repeating the loop formation of S330-S350 in being the

music to which the predetermined period has not passed since a receiving day, suppose that it excepts from the candidate for decision that it is the non-charged music in S330 about the music which became negative judgment by S350 on control.

[0052] Thus, even if it deletes all from a receiving day with non-charged music about what has passed more than alpha day, when the availability of a hard disk 23 is still under the amount of targets, it becomes negative judgment by S340, and shifts to S380. In the processing after S380, even if it is not once requested even if it is accounting ending shortly, or requested at least at once, the music to which the request is not carried out over the long period of time after that considers that also whenever [need] is low relatively, and deletes it. In addition, accounting and the operating-experience table in the condition of having deleted all from the receiving day with non-charged music about what has passed more than alpha day are shown in drawing 6 for subsequent explanation.

[0053] In order to inspect in order of the record about accounting and an operating-experience table (drawing 6) first, it is referred to as n= 1, and receiving Japan or last request Japan of the record is read S380 by S390 continuing. For example, in the case where it is shown in drawing 6 , receiving Japan about a tune number number "0001" or last request Japan which is the first record is on January 7, Heisei 6.

[0054] And in S400 continuing, in order to judge whether the condition of not being requested once continues for a long period of time, it judges whether it has passed more than beta day since receiving Japan or last request Japan. For example, supposing what the condition of not being requested about six months or more follows as beta= 180 presupposes that you may delete, for example, it performs this processing on April 1, Heisei 7, since receiving Japan or last request Japan of a thing of the above-mentioned tune number number "0001" is on January 7, Heisei 6, it will serve as affirmative judgment by S400, and will shift to S360.

[0055] In S360, the karaoke data memorized by the hard disk 23 is deleted. And in S370 continuing, the record which corresponds out of accounting and an operating-experience table (in this case, refer to drawing 6) is deleted, and it returns to S320. In this way, the karaoke data of a tune number number "0001" are first deleted from a hard disk 23, for example, a correspondence record is deleted out of accounting and an operating-experience table, and the availability of a hard disk 23 judges again whether it is under the amount of targets by S320.

[0056] And when the availability of a hard disk 23 is still under the amount of targets, processing not more than S330 is repeated. Although the first receiving Japan or last request Japan of a record is specifically read by S390 which shifts to S380 again and continues, since the record of a tune number number "0001" is deleted from the condition shown in drawing 6 in this case, the first record becomes the thing of a tune number number "0003." The day read is in S390 on November 24, Heisei 6. this -- the

term of a use count -- "1" -- it may be once requested on November 24, Heisei 6 so that a certain thing may also show

[0057] In this case, since it has not passed more than beta day (S400:NO), it shifts to S410. In S410, in order to inspect the following record, the increment (n<-n +1) of the n is carried out, and it returns to S390. In this way, although a record is inspected in order and it is that of **, if it explains by the case where it is shown in drawing 6 , since it would not be deleted since neither had passed more than beta day about three, a tune number number "0004", "0006", and "0007", but the next receiving Japan or next last request Japan of a tune number number "0008" will have passed more than beta day, it will be deleted.

[0058] Thus, it deletes about the karaoke data which have passed more than alpha day since the receiving day with non-charged music first in this karaoke data news deletion, and the karaoke data with which a request is not carried out more than beta day even if it is accounting ending are deleted, and even if it deletes all the corresponding things, when the availability of a hard disk 23 is still under the amount of targets, it controls so that a hard disk 23 is equipped with the availability more than the amount of targets.

[0059] In this way, after karaoke data deletion processing is completed, it shifts to S280 of the flow chart of drawing 3 . When an availability is not enough in order to judge the availability of a hard disk 23 and to receive a new song before receiving karaoke data with the new karaoke terminal 2 as explained above with reference to the flow chart of drawing 4 and drawing 5 , and 6, whenever [need] can be judged for every karaoke data, and whenever [need] can delete from a low thing.

[0060] In addition, although the data which delete as a factor having not charged and that there is no prolonged request were determined in the above-mentioned example, taking into consideration the use count shown in the table of drawing 5 , i.e., the requested count, in the case of the decision of deletion data is also considered. That is, even if the period which is not used apparently was long, when it sees in the long run, it is made constant, and the use count may be total and may increase. moreover, conversely, at least when the receiving stage or accounting stage of the karaoke data is recently, a use count Since the use count is natural at least, it is desirable for predetermined period use not to be carried out, or not to judge that whenever [need] is simply low only by saying [that there are few use counts], for example, to analyze synthetically a period, operating frequency, etc. which are not used and to judge whenever [need].

[0061] Moreover, since it is assumed also when needed also about the deleted karaoke data from now on, the record which considered as the management in that case, for example, was deleted is memorized, and things are also considered to choose desired karaoke data from there and to enable it to require distribution of the karaoke center 1. Moreover, the memory apparatus of another hard disk as external storage or

others is prepared, and when it was made to carry out evacuation storage and it is needed for it, it is beginning to read again from there and you may make it make it return to a hard disk 23, since what is necessary is just to secure the availability of the hard disk 23 which is the store of the karaoke terminal 2.

[0062] In addition, this invention of the ability of various modification to be added in the range which is not limited to the operation gestalt mentioned above and does not deviate from the main point of invention is natural. For example, with the above-mentioned operation gestalt, after transmitting the size which the karaoke center 1 distributes to the karaoke terminal 2 by the ground communication line 40, the operation log was received from the karaoke terminal 2, but after sending from each karaoke terminal 2 and transmitting an operation log to the karaoke center 1, the karaoke center 1 can also send distribution size to the karaoke terminal 2.

[0063] Moreover, the above-mentioned operation gestalt explained as that by which CPU20 of the karaoke terminal 2 is equivalent to an "availability decision means", a "information deletion means", and "being a decision means whenever [need]." About the "information deletion means" of these, although it is meaningless if the karaoke terminal 2 does not perform, it is [decision / decision of an availability, or / of whenever / need] also possible to perform by the karaoke center 1 side, for example based on the operation log from the karaoke terminal 2. However, since information deletion will be performed as a result of the decision, it is desirable to also perform decision of whenever [availability and need] by the karaoke terminal 2 side like the above-mentioned operation gestalt.

[0064] Moreover, it cannot be overemphasized that the candidate for application of this invention may be applied as a distribution network of not only a communication link type karaoke system but game software etc.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the block diagram showing the outline configuration at the time of applying the information distribution system of 1 operation gestalt of this invention to an online karaoke system.

[Drawing 2] It is the flow chart which shows the processing performed in the karaoke

center of an operation gestalt.

[Drawing 3] It is the flow chart which shows the processing performed at the karaoke terminal of an operation gestalt.

[Drawing 4] It is the flow chart which shows karaoke data deletion processing in which search automatically, and the low karaoke data of whenever [need] are deleted as required.

[Drawing 5] It is the explanatory view of the accounting and the operating-experience table stored in the hard disk of the karaoke terminal of an operation gestalt.

[Drawing 6] Similarly it is the explanatory view of accounting and an operating-experience table, and is the explanatory view showing the condition after deletion was performed.

[Description of Notations]

1 -- Karaoke center 2 -- Karaoke terminal

11 -- Satellite communication section 12 -- Land-based line communications department

13 -- Hard disk 21 -- Satellite communication section

22 -- Land-based line communications department 23 -- Hard disk

30 -- Satellite communication circuit 31 -- Satellite relay center

40 -- Ground communication line 41 -- Telephone network